

## Spool valve

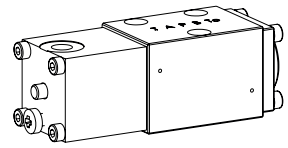
### Flange construction

- ◆ pneumatically operated
- ◆ 4/2-way impulse valve
- ◆ 4/3-way with spring centred mid position
- ◆ 4/2-way with spring reset
- ◆  $Q_{max} = 20 \text{ l/min}$
- ◆  $p_{max} = 350 \text{ bar}$

### DESCRIPTION

Direct operated spool valve, pneumatically operated, with 4 connections in a 5 chamber system. Spool detented or with spring. Without actuation, the spool is held in the center position by the spring (4/3), or switched back to the offset position (4/2). With the detent, the spool is held in the last switching position selected. Precise spool fit, low leakage, long service life time. Spool made from hardened steel, body from high quality hydraulic cast steel.

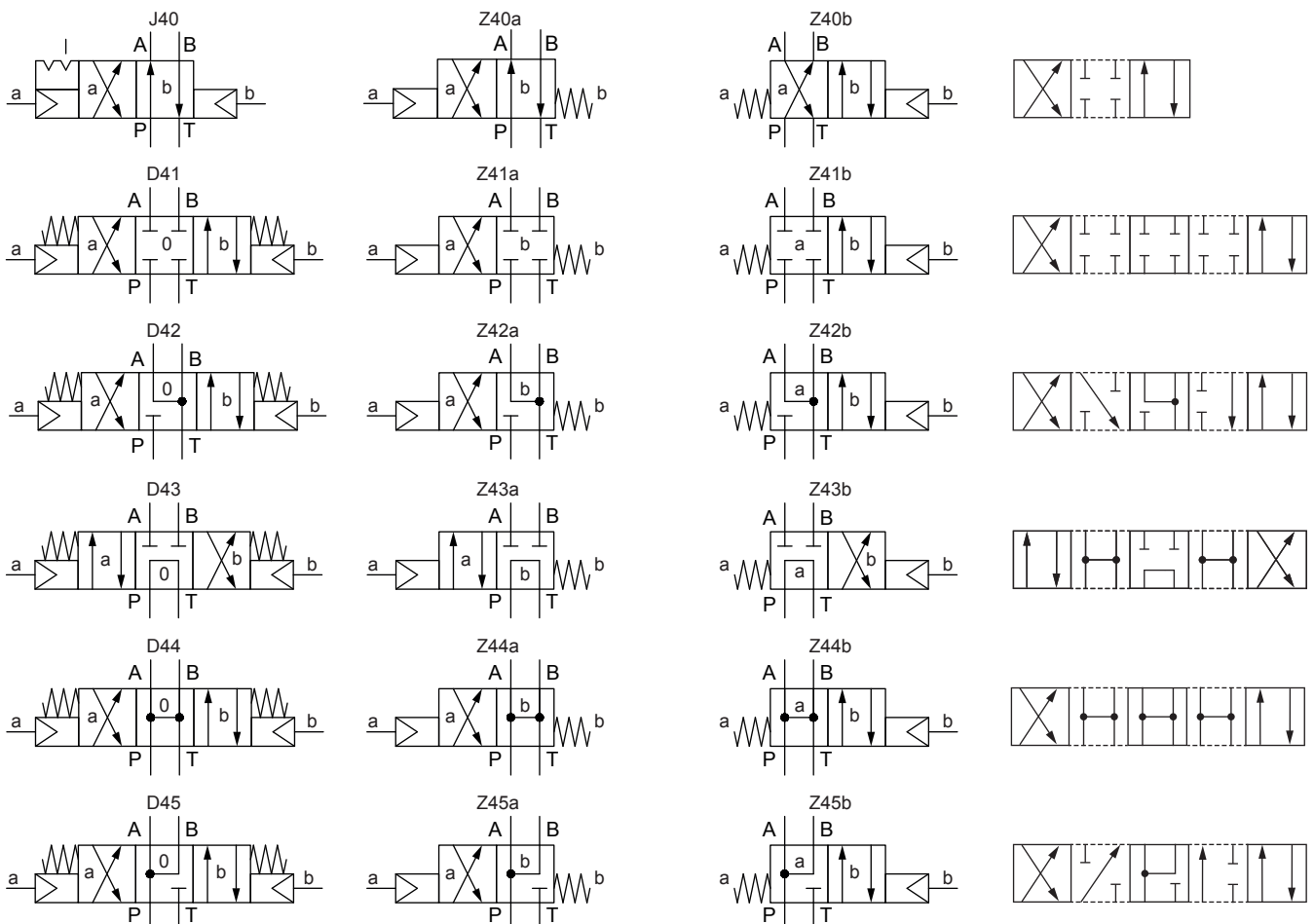
### NG4-Mini



### APPLICATION

Spool valves are mainly used for controlling direction of movement and stopping of hydraulic cylinders and motors. The direction of movement is determined by the position of the spool and its symbol. Miniature valves are used where both, reduced dimensions and weight are important.

### SYMBOL



## TYPE CODE

Mounting interface acc. to Wandfluh standard	B	K	4	-	#	
Pneumatically operated						
Number of control ports						
Designation of symbols acc. to table						
Sealing material	NBR					
	FKM (Viton)					
Design index (subject to change)						

1.6-20

## GENERAL SPECIFICATIONS

Designation	4/2-, 4/3-spool valve
Construction	Direct operated
Mounting	Flange construction
Nominal size	NG4-Mini according to Wandfluh standard
Actuation	Pneumatically operated
Ambient temperature	-25...+70 °C (NBR) -20...+70 °C (FKM)
Weight	0,82 kg (actuation) 1,04 kg (actuators)
MTTFd	150 years

## HYDRAULIC SPECIFICATIONS

Working pressure	$p_{max} = 350$ bar
Tank pressure	$p_{Tmax} = 100$ bar
Maximum volume flow	$Q_{max} = 20$ l/min, see characteristics
Leakage volume flow	See characteristics
Fluid	Mineral oil, other fluid on request
Viscosity range	12 mm <sup>2</sup> /s...320 mm <sup>2</sup> /s
Temperature range fluid	-20...+70 °C
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade $\beta_{10...16} \geq 75$ , see data sheet 1.0-50

## INSTALLATION NOTES

Mounting type	Flange mounting 3 fixing holes for socket head screws M5 x 40
Mounting position	Any, preferably horizontal
Tightening torque	$M_D = 5,2$ Nm (screw quality 8.8, zinc-coated) Fixing screws

### Note!



The length of the fixing screw depends on the base material of the connection element.

## ACTUATION

Actuation	Pneumatically operated
Execution	Actuation BKII
Pilot pressure	$p_{Vmin} = 2.5$ bar at $p_1 = 20$ bar $p_{Vmin} = 5$ bar at $p_1 = 100$ bar
Control volume	$V = 2.5$ cm <sup>3</sup>

## SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

## MANUAL OVERRIDE

In mechanical control head integrated. Actuation by pressing the pin

## STANDARDS

Mounting interface	Wandfluh standard
Contamination efficiency	ISO 4406

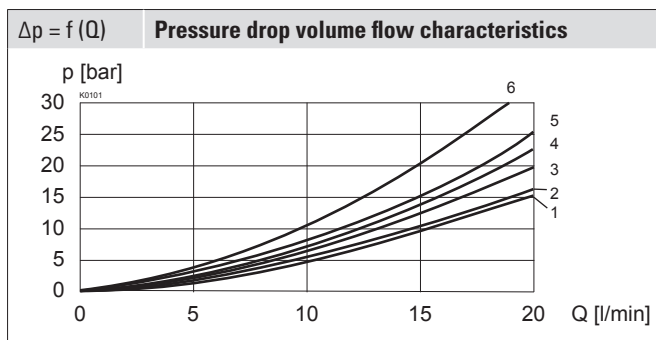
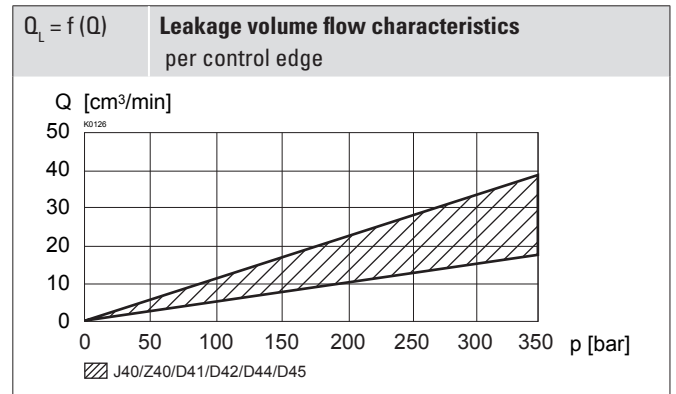
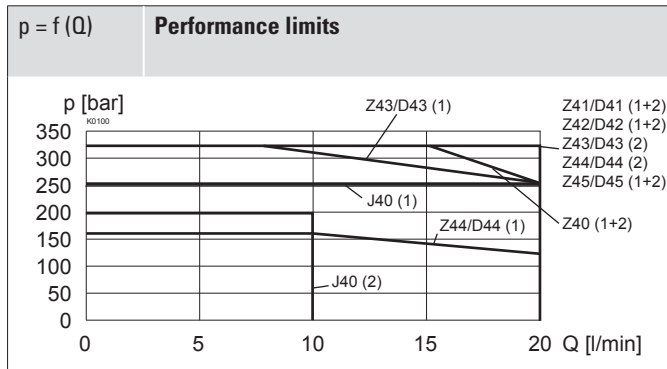
## SURFACE TREATMENT

- ◆ The valve body is painted with a two component paint
- ◆ The pneumatic actuation, the cover and the socket head screws are zinc coated

## ACCESSORIES

Fixing screws	Data sheet 1.0-60
Threaded subplates	Data sheet 2.9-10
Multi-station subplates	Data sheet 2.9-50
Horizontal mounting blocks	Data sheet 2.9-90
Technical explanations	Data sheet 1.0-100
Hydraulic fluids	Data sheet 1.0-50
Filtration	Data sheet 1.0-50

## PERFORMANCE SPECIFICATIONS

 Oil viscosity  $\nu = 30 \text{ mm}^2/\text{s}$ 


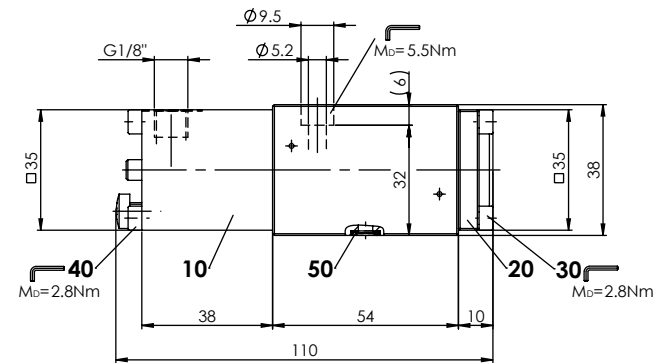
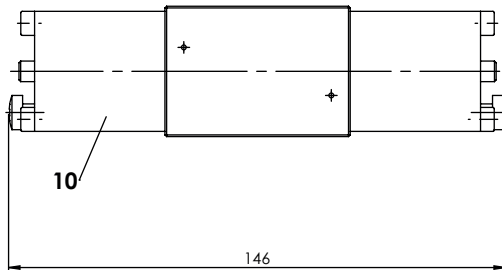
Symbol	Volume flow direction				
	P - A	P - B	P - T	A - T	B - T
Z40 / J40	5	5	-	2	2
D41 / Z41	5	5	-	2	2
D42 / Z42	5	5	-	1	1
D43 / Z43	4	4	6	2	2
D44 / Z44	4	4	3	2	2
D45 / Z45	4	4	-	2	2

## DIMENSIONS

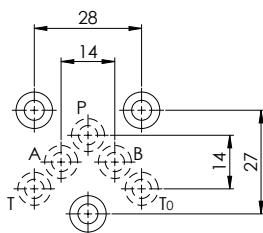
4/3-way valve (spring centred)

4/2-way valve (impulse)

4/2-way valve (spring reset)



## HYDRAULIC CONNECTION



## PARTS LIST

Position	Article	Description
10	254.2000	Pneumatic actuation BK II
20	057.4202	Cover
30	246.1113	Socket head screw M4 x 12 DIN 912
40	246.1146	Socket head screw M4 x 45 DIN 912
50	160.2052	O-ring ID 5,28 x 1,78 (NBR)

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